Initial Application for Use and Acceptance of Existing Data For

Wärtsilä AQUARIUS® EC BWMS

46 CFR Cite	Description	Complies	Explanation
§162.060-14	General information requirements	YES	All required information is included in the Application for Acceptance as an AMS as noted in the AMS Checklist at various locations.
§162.060-16	Changes to an approved BWMS	YES	See Technical Note and Responses to CG-OES Policy Letter 12-01, Encl. 1 for specific details. Minor modifications/specification upgrades were completed after shipboard and land-based testing were completed to make the system more compact, sturdy and user-friendly. Modifications were approved by Administration during Type Approval certification review and LR their contacted Class.
§162.060-20(a)	Design and Construction requirements-general	PARTIAL	AQUARIUS® EC BWMS technical files have been submitted to both Lloyd's Register and ABS for Design Type Approval and evaluation/decisions are pending.
§162.060-20(b)	Monitoring and control equipment	YES	The monitoring and control equipment for AQUARIUS® EC BWMS exceeds requirement for storage capacity and monitoring capability. (see checklist item 1.1.3)
§162.060-20(c)	Emergency controls and alarms	YES	Description of emergency controls and alarms is provided in AQUARIUS® EC Technical Manual (Document 3.1)
§162.060-20(d)	Installation in hazardous locations	N/A	AQUARIUS® EC has been type approved for installation only in non-hazardous locations.
§162.060-20(e)	Maintenance and tamper-resistance	YES	All critical control components and modules subject to potential tampering are password protected. All cleaning, maintenance and repair activities must be initiated from the control panel and are recorded.

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§162.060-20(f)	Must not use dilution as means of achieving BWDS	YES	The BWMS is not capable of diluting either during ballasting or deballasting operations.
§162.060-20(g-h)	Storage and safe handling of hazardous substances	YES	There are no hazardous substances associated with the operation or maintenance of the AQUARIUS® EC BWMS. The neutralizer Sodium Bisulfite is employed to ensure compliance of the TRO discharges with the MARPOL MADC 0.2mg/L. Storage of this agent is dealt with in the manual (Document 3.1). Also presented to GESAMP for approval see CD2-AQUARIUS EC BWMS Final Approval document pack →1.0 Final Approval Application →9.2 Storage and Handling of Substances
§162.060-22	Marking requirements	YES	The AQUARIUS® EC BWMS is marked in accordance with Class Society and Administration requirements which are similar to the requirements herein.
§162.060-24	Test Plan requirements	YES	A test plan which meets many of the regulatory requirements is contained within the QAPP for land-based and shipboard testing.
§162.060-26	Land-based testing requirements	YES	Land-based testing was conducted by NIOZ personnel at their facility. All sample collection and analysis was completed in accordance with the G8 Guidelines using SOPs developed, tested and verified by senior NIOZ Quality Management Staff.
§162.060-26(a)	Compliance with ETV requirements	YES	The testing conducted was completed in compliance with the G8 Guidelines and thus does not meet many of the requirements of ETV.
§162.060-26(b-c)	Five consecutive, valid, successful replicate test cycles	YES	Testing was conducted by NIOZ personnel with no intervention or assistance by Wärtsilä personnel (beyond initial set-up and commissioning at the test facility). Five consecutive, valid , successful replicate test cycles were completed in accordance with the G8 Guidelines, the QMP and QAPP and facility generated and validated procedures.

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§162.060-26(d-e)	Appropriate salinity regimes	YES	Testing was completed at marine water and brackish water salinities. In both salinity regimes, the salinity fell within the ETV Protocol ranges.
§162.060-26(f-g)	Tested at rated capacity and/or CFD calculations to demonstrate higher/lower flow rates	YES	The BWMS was tested at 250m^3 which is the rated capacity for the tested BWMS. Flow rates were verified and documented by LR during the oversight visits AMS Support Documents (TA Files) → Vol 1.0 → Document 1.2.2
§162.060-28	Shipboard testing		
§162.060-28(b)	Conducted throughout a 6 month period	YES	Shipboard testing was completed during February 2012 through February 2013 as documented in the Final Shipboard Report. AMS Support Documents (TA Files) →Vol.15.0 → Document 15.1
§162.060-28(c-d)	BWMS installed, configured and operated consistent with final operating intention	YES	Lloyds Register evaluated the installation to ensure it was consistent with good marine practice and with consideration for the BWMS's intended purpose and intent.
§162.060-28(e)	Appropriateness of vessel for shipboard testing	YES	BWMS flow rate capacity is 250 m^3/hr. Vessel ballast water system has a 250 m^3/hr ballasting pump. All ballasting was conducted in European port.

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§162.060-28(f)	Sampling ports	YES	Sampling ports were installed in accordance with G8 requirements.
§162.060-28(g)	Five consecutive, valid, successful test cycles	YES	Three consecutive, valid, successful shipboard tests were conducted in full compliance with the G8 Guidelines. In all three test cycles, the challenge water conditions exceeded the G8 Guidelines and CG regulations.
§162.060-28(h-j)	Test results include biological efficacy, challenge water criteria and maintenance	YES	All challenge water criteria, ballasting/deballasting locations, volumes, and engineering parameters were recorded by ship's crew during the operation of the system. No repairs or maintenance were required or conducted.
§162.060-30	Environmental testing	YES	All specified environmental testing was conducted in accordance with G8 Guidelines and CG regulations.
§162.060-32	Testing for active substances	YES	An evaluation of active substances has been carried out in accordance to the IMO G9 guidelines and followed the two stage review process marked by the Basic and Final Approval by the IMO GESAMP BWWC.
§162.060-34	Test Report requirements	YES	All information required for this report is contained in the Shipboard Test Report and/or the Land-based Test Report.
§162.060-36	Quality Assurance Project Plan requirements	YES	The QAPPs for shipboard and land-based testing were developed by GoConsult and NIOZ respectively in accordance with the guidance provided in G8. The QA/QC program was reviewed and accepted by The Netherlands and Lloyd's Register.

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§162.060-38	Operation, Maintenance, and Safety Manual requirements	YES	The AQUARIUS® EC BWMS Operation Manual meets or exceeds all requirements contained at 46 CFR 162.060-38
§162.060-40	Requirements for Independent Labs		NIOZ and GoConsult meet the requirements for an Independent Lab in that they routinely complete testing of this type; have the equipment, personnel, facilities and expertise to carry out this testing; and have no relationship with Wärtsilä (or Hamworthy) other than as a contractor for services. NIOZ and GoConsult do not meet the Administrative requirements for an Independent Lab at §159.010-5.